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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,983	03/23/2001	Jordi Ribas Corbera	KDO:190230-5	7293

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EXAMINER

PHILIPPE, GIMS S

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 04/19/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,983

Applicant(s)

CORBERA, JORDI RIBAS

Examiner

Gims S Philippe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 7-19 and 24-34 is/are allowed.
6) ☒ Claim(s) 1-6, 20 and 21 is/are rejected.
7) ☒ Claim(s) 22 and 23 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a first action in response to application no. 09/816,983 filed on March 23, 2001 in which claims 1-34 are presented for examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Inoue (US Patent no. 6,683,911).

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Regarding claim 1, Inoue discloses a method for encoding a video frame taking a human visual system into consideration (See Inoue col. 9, lines 37-53), the method comprising the steps of increasing the quantization sectors of an image where the quantization noise and coding artifacts are less noticeable to the human visual system (See Inoue col. 10, lines 23-26), decreasing quantization in sectors of the video frame where quantization noise is more noticeable to the human visual system (See Inoue col. 10, lines 26-31).

3. Claims 1-6, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Aravind et al. (US Patent no. 5214507).

Regarding claim 1, Aravind discloses a method for encoding a video frame taking a human visual system into consideration (See Aravind's Abstract), the method comprising the steps of increasing the quantization sectors of an image where the quantization noise and coding artifacts are less noticeable to the human visual system (See Aravind col. 6, lines 4-14), decreasing quantization in sectors of the video frame where quantization noise is more noticeable to the human visual system (See Aravind col. 5, lines 64-68, and col. 6, lines 1-4).

As per claims 2-3, most of the limitations of these claims have been noted in the above rejection of claim 1. In addition, Aravind further discloses freeing surplus bits when

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quantization is to be increased, and adding bits when quantization is to be decreased (See Aravind col. 13, lines 14-37).

As per claims 4-6, most of the limitations of these claims have been noted in the above rejection of claim 1. In addition, Aravind performs the image quality determination as it receives a target number of bits for the frame as discloses in col. 13, lines 14-37. A determination with respect to the number of bits is performed at that time the quantization is to be either increased or decreased (See Selection process in Aravind's fig. 1, and illustrated in col. 13, lines 14-37).

As per claim 20, Aravind discloses a method for adaptive quantization of the encoding of a video frame based on predicted bit rate (See Aravind col. 3, lines 31-41), the method comprising the steps of decreasing the QP in low-texture sectors of the video frame that can be encoded with a relatively small increase in the predicted bit rate (See Aravind col. 5, lines 64-68, and col. 6, lines 1-4), increasing a QP in high texture sectors of the video frame only when a decrease in the predicted bit rate is relatively large (See Aravind col. 6, lines 4-14), and turning off the steps of decreasing a QP and increasing a QP if the relatively small increase in the predicted bit rate for encoding the low-texture sectors is larger than the decrease in the predicted bit rate for encoding the high-textured sectors (See Aravind col. 13, lines 14-53). The applicant should note that the turning off the increasing or decreasing is in a direct relation with the statistical activity

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within a specific frame. Aravind anticipates this step by performing the selection as disclosed in col. 13, lines 14-53.

As per claim 21, most of the limitations of these claims have been noted in the above rejection of claim 20. In addition, Aravind further discloses increasing the QP and decreasing the QP by a constant (See Aravind col. 5, lines 19-27, and lines 41-60).

Allowable Subject Matter

4. Claims 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 7-19, and 24-34 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

The claims are allowable over the prior art of record because the prior art fails to particularly teach or suggest, among other limitations of independent claims, *"quantifying busy sectors by using a second higher QP value and flat sectors using a third lower QP value if a video frame has sufficient busy sectors in surplus bit rates are sufficient to encode the flat sectors, and encoding the video frame entirely using a first*

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default QP value if encoding the video frame entirely using the first default QP value would be more efficient than quantifying the busy sectors using a second higher QP value and quantifying the flat sectors using the third lower QP".

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al. (US Patent no. 5933194) teaches method and circuit for determining quantization interval in image encoder.

Peak (US Patent no. 5847766) teaches video encoding method and apparatus based on human visual sensitivity.

Gardos (US Patent no. 5802213) teaches encoding video signals using local quantization levels.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on M-F (9:30-7:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on (703) 305-4780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gims S Philippe
Primary Examiner
Art Unit 2613

GSP

April 15, 2004


GIMS PHILIPPE
PRIMARY EXAMINER